

Appl. No. 09/973,103
Amdt. dated May 17, 2005
Reply to Office Action of February 17, 2005

REMARKS

Reconsideration of this application and the rejection of claims 1-12 and 14 are respectfully requested. Applicants have attempted to address every objection and ground for rejection in the Office Action dated February 17, 2005 (Paper No. 20050215) and believe the application is now in condition for allowance. The claims have been amended to more clearly describe the present invention.

Applicants acknowledge the allowance of claims 15 and 16 as well as the allowability of claim 13. In view of the above amendment and the remarks below, independent claims 1 and 7 are considered to be allowable in their amended form and dependent claims 2-6 and 8-14 should be allowable based upon the amendments to claims 1 and 7. As directed by the Examiner, Applicants have revised the specification to correctly reflect the status of the parent application.

Claims 1-3 and 7 stand rejected under 35 U.S.C. §102(b) as being anticipated by Peters (U.S. 5,954,029). Peters discloses a fuel injector having a variable volume metering chamber within a fuel injector. However, in Peters the amount of fuel metered is determined by automatic means, which is a function of engine operation. Peters fails to disclose manual adjustment of the internal volume of the metering chamber to determine the amount of fuel metered, as now recited, among other things, in claim 1.

Further, claims 2 and 3 depend from independent amended claim 1, now submitted to be in allowable form. Additionally claim 3 is amended to now recite, among

other things, that the plunger is located partially within said metering chamber and partially external to said metering chamber. In Peters, the plunger is totally within the metering chamber.

With respect to claim 7, Peters discloses a fuel injector having a variable volume metering chamber within a fuel injector. However, in Peters the amount of fuel metered is determined by varying the pressure of fuel supplied through passage 50 from the fuel supply 48, as discussed in Peters at column 5, lines 2-8. Peters fails to disclose adjusting the internal volume of the metering chamber to determine the amount of fuel metered.

In contrast, the instant invention varies the volume of the metering chamber to determine the amount of fuel metered. Accordingly, claim 7 has been amended to recite, among other things, a plunger configured for reciprocal movement relative to said chamber for adjusting the internal volume of said metering chamber to determine the amount of fuel metered, and upon adjustment, a position of said plunger relative to said chamber remains constant until a subsequent adjustment, and is independent of tool operation. Since Peters does not disclose the subject matter of amended claims 1-3 and 7, the rejections based thereon are respectfully traversed.

Similarly, claims 4-6 and 8-14 were rejected as obvious under 35 U.S.C. §103 based upon Peters (U.S. Patent No. 5,954,029). The arguments asserted above traversing Peters are re-asserted here. A §103 rejection requires a showing that a person of ordinary skill in the art would have had a motivation to modify the reference and that the modified

Appl. No. 09/973,103
Amdt. dated May 17, 2005
Reply to Office Action of February 17, 2005

reference teaches each and every claim limitation. Further, this motivation must be proven by objective factual findings. The Official Action fails to provide such findings and states experimentation would be required to achieve the results of the instant invention. A §103 rejection cannot change the principle of operation of a reference, nor can putative experimentation suggest a basis for modifying a reference.

Claims 5 and 9-12 recite, among other things, features not disclosed or suggested by Peters. With respect to claims 5 and 9, Peters discloses a fuel injector with a plunger that is able to reciprocate within the sleeve. Claims 5 and 9 recite, among other things, that at least a portion of said sleeve and said plunger are threadably engaged relative to each other to adjust the amount of insertion of said plunger into said metering chamber. However, Peters would be inoperative if the sleeve and plunger were threadably engaged. There can be no suggestion or motivation to modify a prior art reference, as required for a §103 rejection, if the modification would render the reference unsatisfactory for its intended purpose. Since the modification of Peters proposed in the Official Action would render Peters inoperative, the §103 rejection of claims 5 and 9 is improper. Further, this rejection is improper with respect to claim 10, which depends from claim 9.

With respect to claims 11 and 12, Peters discloses a fuel metering system where the metering chamber is formed within a cylinder having a plunger reciprocatingly within the cylinder. Peters fails to disclose or suggest a valve assembly having a plunger that is offset from a vertical plane bisecting the metering the chamber in the direction of reciprocal

Appl. No. 09/973,103
Amdt. dated May 17, 2005
Reply to Office Action of February 17, 2005

movement. Peters does not disclose or suggest a valve assembly having a plunger that is reciprocal along a generally normal axis to the axis of operation of the valve assembly. Accordingly, claims 2, 4-6 and 8-14 cannot be obvious in light of Peters as the fuel injector of Peters functions in a dissimilar manner than the instant invention.

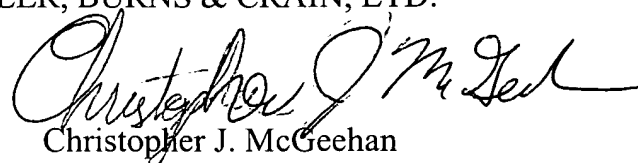
Accordingly, the §103 rejection is improper, and is respectfully traversed. In addition, the rejected claims depend respectively from amended independent claims 1 and 7, now submitted to be in allowable form.

Applicants submit that, in view of the above-identified amendments and remarks, the claims in their present form are patentably distinct over the art of record. Allowance of the rejected claims is respectfully requested. Should the Examiner discover there are remaining issues which may be resolved by a telephone interview, he is invited to contact Applicants' undersigned attorney at the telephone number listed below or Lisa Soltis, main attorney of record at (847) 657-7980. Correspondence should be directed to Lisa Soltis.

Respectfully submitted,

GREER, BURNS & CRAIN, LTD.

By



Christopher J. McGeehan
Registration No. 56,001
Attorney for Applicants

May 17, 2005
300 South Wacker Drive - Suite 2500
Chicago, Illinois 60606
Telephone: (312) 360-0080
Facsimile: (312) 360-9315